REMARKS

Receipt of the Office Action of April 2, 2009 is gratefully acknowledged.

Claims 14 - 26 are pending and have been examined with the following results: claims 14, 16 - 18, 23, 25 and 26 are rejected under 35 USC 102(b) by Johnson et al; claims 14, 15, 17, 18 and 21 - 26 are rejected under 35 USC 102(b) by Umezawa; claims 19 and 20 are rejected under 35 USC 103(a) over Johnson et al or Umezawa in view of Onishi et al; and claim 25 is rejected under 35 USC 103(a) over Johnson et al or Umezawa in view of Drahm.

These rejections have been carefully considered on their merits. The references, however, cannot, it is respectfully submitted, anticipate (35 USC 102) or render obvious (35 USC 103) claims 14 - 26. Nevertheless, a clarify amendment to claims 14 and 26 has been introduced to better distinguish the invention. In both claims, it has been specified that what is monitored as opposed to identifying it generally as a physical or chemical process variable. With this amendment to both claims 14 and 26, the Jojnson et al reference should be removed from consideration as noted below.
Johnson et al. teach an acoustic resonator for measuring force.

The References:

Johnson et al. state, teach an acoustic resonator for measuring force. Johnson et al that "the presented acoustic resonator comprises a cylindrical body having a central section and two distal sections wherein selected acoustic resonant modes are trapped in the central section (column 3, lines 12-15). An electromagnetic acoustic transducer can be used to excite and detect the selected resonant modes in the central section. Force applied to the distal sections alters the resonant frequencies of the selected modes (column 3, lines 24-28)."

The acoustic resonator of claim 14 uses a change in frequency to measure a physical variable. The physical variable to be measured is thereby restricted to force applied to the cylindrical body or, in one special embodiment of the apparatus in which

the cylindrical body is a hollow tube (column 11, lines 27-36), extended to comprise also the pressure of a static or moving fluid enclosed within the resonator. Both force and pressure of a fluid are not measured by the apparatus, as is clear in amended claim 14. Further, Johnson et al. state that the frequency of the excitation current can be varied in order to keep the central section in resonance (column 10, lines 52-57). The tuning unit allows varying frequency, so that the central section is always excited with its resonance frequency. This resonant frequency changes with applied force, so that it has to be adjusted when the applied force remains and the apparatus is desired to be sensitive to another change in force.

Considering this scope and behavior of the tuning unit stated by Johnson et al., it differs from the tuning unit of amended claim 14. If the resonance frequency of the apparatus disclosed in amended claim 14 changes, it is not only the exciting frequency that is changed by the tuning unit, but the resonance frequency of the oscillatable unit itself is changed by changing the stiffness of the oscillatable unit.

Therefore, not only the scope of the apparatus of claim 14 and the apparatus as described by Johnson et al., but also the embodiments of the tuning units differ.

Regarding the Umezawa, it is respectfully submitted that the examiner is mistaken in that a tuning unit is present in the apparatus disclosed by Umezawa. Umezawa discloses a vibrator-type level sensor having a detecting pipe in which an inner vibration member with piezo-electric devices is mounted, the detecting pipe and the inner vibration member constituting a folded cantilever (see abstract). A detecting means detects a decrease of vibration, thereby measuring the established physical contact of the vibration member with the material whose level is to be determined. An oscillation circuit is formed by a vibrating piezo-electric device, a receiving piezo-electric device, an input circuit, an amplifier and an output circuit. This oscillation circuit ensures that the inner vibration member vibrates at an eigenfrequency of the folded cantilever (column 3, lines 34-37 and 46-49). The eigenfrequency of the cantilever inter alia depends on the moment of inertia of the cantilever and hence on its mass (see formula in column 4). If the mass of the cantilever is changed, e.g. because of formation of deposit on the cantilever, the eigenfrequency is changed

likewise. The oscillation circuit reacts to the change in frequency and oscillates with the new eigenfrequency (column 3, lines 49-52). So does the inner vibration member. Umezawa provides no hint that the eigenfrequency can be influenced by a tuning unit. The tuning unit referred to by the examiner (column 2, lines 55-60), is equivalent to the oscillation circuit explained above and therefore not relevant in view of the tuning unit referred to in amended claim 14.

As no tuning unit for influencing the eigenfrequency of the level sensor is disclosed, amended claim 14 is certainly distinguishable over Umezawa.

Onishi teaches a Coriolis flowmeter composed of a straight conduit through which a fluid to be measured flows, and two counter straight rods that are aligned on both sides of the conduit in parallel. Both of the counter rods and the conduit are fixed on each end on a common support block. The conduit and the counter rods vibrate in opposite phase. Applicant cannot agree with the examiner in that the arrangement of a counter rod on each side of the flow tube in combination with one of the apparatuses disclosed by Johnson et al. or Umezawa leads to the apparatus disclosed in claims 19-20. Claim 19 describes an apparatus comprising an inner oscillatory rod that is surrounded by an outer oscillatory rod coaxially. At least one tuning unit is coupled at least with one of the oscillatory rods. This is a special embodiment of a so-called single-rod, and not an embodiment of a Coriolis flowmeter.

As Johnson et al., Umezawa, and Onishi do not disclose a tuning unit. Therefore, the apparatus disclosed in claims 19-20 would not have been obvious to a person skilled in the art by combining Johnson et al. or Umezawa with Onishi.

Drahm describes a Coriolis flowmeter comprising a straight measuring tube which is traversed by the fluid to be measured and a straight dummy tube extending parallel to the measuring tube which is not traversed by the fluid. A flowmeter of this kind is included within the scope of claim 25. However, the apparatus taught by Drahm lacks a tuning unit. A driver arrangement is mounted on the dummy tube which automatically adjusts to the resonance frequency of the tube (column 5, lines 58-64).

The resonance frequency itself is not influenced. Hence, the apparatus covered by claim 25 would not have been obvious to one having ordinary skill in the art by combining Johnson et al. or Umezawa with Onishi.

As claims 14 -26 are believed to be patentable over the art of record, reconsideration and re-examination are respectfully requested and claims 14 - 26 found allowable.

Respectfully submitted,
BACON & THOMAS, PLLC

Date: June 30, 2009

Felix J. D'Ambrosio
Attorney for Applicant
Registration Number 25,721

Customer Number *23364*
BACON & THOMAS, PLLC
625 Slaters Lane, Fourth Floor
Alexandria, Virginia 22314
Telephone: (703) 683-0500
Facsimile: (703) 683-1080
S:\Producer\fjd\CLIENTS\Endress+Hauser Holding GmbH\LOPA3011-EH0687\June 30 2009 Response.wpd